

**I claim:**

1. An integrated wireless and wired hands-free device for a mobile phone,  
comprising:

5 a blue-tooth wireless transceiving module used to receive and output an  
incoming signal and send out an activation control signal;

an audio mix switch used for receiving said activation control signal to  
switch a voice transmission channel to be used by said blue-tooth wireless  
transceiving module for receiving and transmitting said incoming signal  
from said blue-tooth wireless transceiving module;

10 a control device used to receive and transmit said incoming signal from said  
audio mix switch;

a loudspeaker used to receive said incoming signal from said control device  
for output to be heard by a user;

15 a microphone used to receive and transmit an intercom voice signal of the  
user, said intercom voice signal being transmitted through said control  
device, said audio mix switch and said blue-tooth wireless transceiving  
module and finally sent out by said blue-tooth wireless transceiving module;

and

20 a wired transmission device connected to said audio mix switch, said wired  
transmission device being connected to a mobile phone without the wireless  
transmission function so that said mobile phone can accomplish voice  
transmission via said wired transmission device, said voice transmission  
channel being used by said wired transmission device to accomplish  
reception of an incoming call and intercommunication of said mobile phone

when said blue-tooth wireless transceiving module does not send out said activation control signal to said audio mix switch.

2. The integrated wireless and wired hands-free device for a mobile phone as claimed in claim 1, wherein said incoming signal is received by an antenna and transmitted to said blue-tooth wireless transceiving module, and said  
5 blue-tooth wireless transceiving module transmits said intercom voice signal to said antenna for emission.
3. The integrated wireless and wired hands-free device for a mobile phone as claimed in claim 1, wherein a loudspeaker volume adjustment device is  
10 further provided to adjust the output volume of said loudspeaker.
4. The integrated wireless and wired hands-free device for a mobile phone as claimed in claim 1, wherein said microphone is an external one and can be placed in an appropriate position in a car.